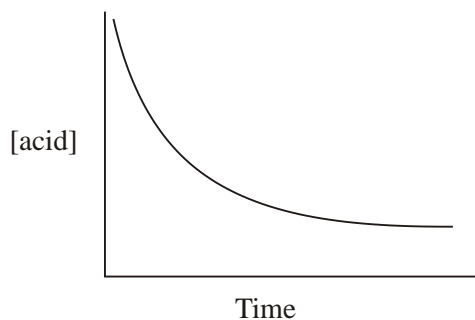


## T06D08 – Kinetics SL IB Review MS

1. B
2. C
3. B
4. C
5. (i)

a curve showing concentration decreases with time;  
i.e.

1



*No penalty if curve reaches x axis*  
*Do not accept a straight line*

- (ii) slope decreases;
- (iii) rate decreases;  
fewer collisions per unit time;

1

2

[4]

6. (i)  $\text{CaCO}_3(\text{s}) + 2\text{H}^+(\text{aq}) \rightarrow \text{Ca}^{2+}(\text{aq}) + \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{g})$   
*States not required, accept molecular equation.*

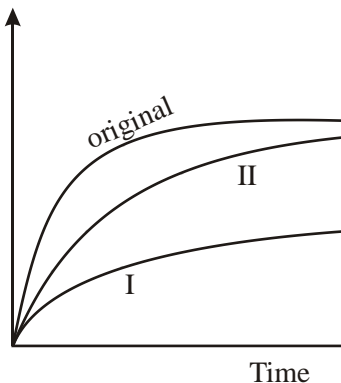
1

- (ii) rate decreases with time;  
as concentration decreases so fewer (successful) collisions;  
draw tangent to the curve at time  $t$ ;  
rate = slope or gradient;

4

- (iii)

Volume of  
 $\text{CO}_2$  produced



- I. (less  $\text{CO}_2$  because) amount of HCl is limiting and half the original/OWTTE;
- II. (same amount of  $\text{CO}_2$  because) amount of HCl is the same;  
curve less steep because less frequent (*accept fewer*) collisions  
*Awarded last mark if in either I or II.*

5

[10]